

## CLAIMS

What is claimed is:

1. An apparatus for stacking photonic devices, comprising;  
a base;  
first and second spaced apart support rails disposed on said base; and  
a vacuum guide disposed on said base between said support rails, said vacuum guide communicating with a vacuum source so that a vacuum gradient is formed in close proximity to said base.
2. The apparatus of claim 1, further comprising first and second spaced apart photonic device supports disposed between said support rails.
3. The apparatus of claim 2, wherein said photonic devices comprise laser bars.
4. The apparatus of claim 3, wherein at least one spacer bar is placed on said support rails between at least two of said laser bars.
5. The apparatus of claim 4, wherein a vacuum is applied to said vacuum guide to bring said at least one spacer bar and at least two laser bars into contact with each other.

6. The apparatus of claim 5, further comprising a clamp to hold said at least one spacer bar and said at least two laser bars in contact with each other.
7. The apparatus of claim 6, further comprising a plurality of spacer bars disposed in an alternating arrangement with said laser bars.
8. The apparatus of claim 3 wherein at least two spacer bars are placed on said support rails and at least one laser bar is placed between said at least two spacer bars.
9. The apparatus of claim 8, wherein a vacuum is applied to said vacuum guide to bring said spacer bars and said laser bar into contact with each other.
10. The apparatus of claim 9, further comprising a clamp to hold said spacer bars and said laser bar in contact with each other.

11. An system for stacking photonic devices, said system comprising:
- a base;
  - first and second spaced apart support rails disposed on said base for holding at least one spacer bar above a surface of said base, said at least one spacer bar separating at least two photonic devices;
  - a vacuum guide disposed between said support rails, said vacuum guide forms a vacuum gradient that brings said at least one spacer bar and said at least two photonic devices into contact with each other; and
  - a mechanism to hold said at least one spacer bar and said at least two photonic devices in contact with each other.
12. The system of claim 11, further comprising first and second spaced apart photonic device supports disposed on said base between said support rails.
13. The system of claim 11, wherein said photonic devices comprise laser bars.
14. The system of claim 11, wherein said support rails comprise part of said mechanism.
15. The system of claim 11, further comprising a plurality of spacer bars and a plurality of photonic devices placed in alternating arrangement to form a stack, said mechanism holding said stack in a fixed position.

16. The system of claim 15, wherein said stack in said mechanism can be rotated to allow a substance to be deposited on said photonic devices.
17. The system of claim 16, wherein said photonic devices comprise laser bars.
18. The system of claim 17, wherein said substance is one of an anti-reflective coating and a highly reflective coating.
19. The system of claim 11, wherein said mechanism comprises one of a C-clamp and a frame element.

20. A method of stacking laser bars, comprising the steps of:
- positioning a plurality of photonic devices substantially on a base disposed at a first height;
- placing a plurality of spacer bars on at least one support rail disposed at a second height, with one spacer bar of said plurality of spacer bars being interposed between each of said photonic devices to form a sequence of bars;
- and
- drawing said sequence of bars into a stack.
21. The method of claim 20, wherein said base has first and second spaced apart photonic device supports disposed on said base between said support rails.
22. The method of claim 20, further comprising a step for holding said stack with a mechanism to hold said spacer bars and said photonic devices in a fixed position with respect to each other.
23. The method of claim 22, wherein said photonic devices comprise laser bars.
24. The method of claim 23, wherein said support rails comprise part of said mechanism.
25. The method of claim 22, wherein said stack in said mechanism can be rotated to allow a substance to be deposited on said photonic devices.

26. The method of claim 25, wherein said photonic devices comprise laser bars.

27. The method of claim 26, wherein said substance is one of an anti-reflective coating and a highly reflective coating.

28. The method of claim 27, wherein said mechanism comprises a frame element, said frame element substantially surrounding one or more ends of said spacer bars.

**WORKMAN NYDEGGER**  
A PROFESSIONAL CORPORATION  
ATTORNEYS AT LAW  
1000 EAGLE GATE TOWER  
60 EAST SOUTH TEMPLE  
SALT LAKE CITY, UTAH 84111